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10/763,207	01/26/2004	Teruhisa Ninomiya	1573.1025	6425

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EXAMINER

FIGUEROA, MARISOL

ART UNIT PAPER NUMBER

2617

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,207

Applicant(s)

NINOMIYA, TERUHISA

Examiner

Marisol Figueroa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Action is in response to applicant's amendment filed on August 7, 2006. The applicant amended claims 1, 5, 6, 8, 9, 10, 11, and canceled claims 2-4, and 7. Accordingly, claims 1, 5, 6, 8, 9, 10, and 11 are currently pending in the present application.

Response to Arguments

2. In response to applicant's arguments that Padovani et al. does not discuss or suggest the recitation of "*an apparatus for a wireless base station for uses in a wireless local area network (LAN) sharing one frequency channel*". This has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

3. Applicant's arguments with respect to claims 1, 9, and 10, regarding that Padovani et al. does not discuss or suggests the recitation of "*a predetermined length of time before the change to said third period of time, said transceiver which is enabled to transmit and receive RF signals starts detection of a transmitted RF signal in a corresponding sector, and broadcast a packet indicative of disabling of transmission during said third period of time and indicative of a length of said third period of time to wireless terminals in a corresponding sector, when said transceiver does not receive an RF signal*", have been considered but are but in view of new ground(s) of rejections.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., In other words,

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the inventions of claims 1, 9, and 10 recite that the wireless terminals for one or more sectors that are not adjacent to each other are disabled from transmission...) are not recited in the rejected claim(s). The limitations recited earlier are not clear as to whether the “broadcasted packet indicative of disabling of transmission during a third period of time” is an indication to the wireless terminals that the sector transceivers will be disabled during the third period of time or an indication to the wireless terminals to disable their transmissions during that period of time. Furthermore, the examiner cannot ascertain what is meant with the limitation “when said transceiver does not receive an RF signal”. It is not clear if the limitation means that something different happens when the transceiver does not receive the RF signal in a corresponding sector or if the transceiver does not receive an RF signal because the transceiver is disabled or the wireless terminals are disabled in the third period of time. The applicant is welcomed to clarify these limitations. For purposes of examination the examiner interprets by this limitation that the transceiver does not receive an RF signal because the transceiver or the wireless terminals are disabled during the third period of time.

4. Applicant’s arguments with respect to claims 8 and 11 have been considered but are moot in new grounds of rejection.

Claim Objections

5. Claim 8 is objected to because of the following informalities:

(a) On line 14 of claim 8, replace the word “receiver” with --transceiver--. Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claim 9** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed term "computer readable storage embodying a method" is broader in scope than the term "computer readable medium encoded with a computer program" and thus is considered to include the possibility of non-statutory matter.

Absent an explicit disclosure to the contrary a "computer readable medium encoded with a computer program" is normally considered to define structural and functional interrelationships between the computer program and the computer software and hardware components which permit the computer's program functionality to be realized and is thus normally statutory.

Consequently, the claimed term "computer readable storage embodying a method" is considered to include the possibility of non-statutory subject matter as compared to a "computer readable medium encoded with a computer program".

In order to overcome this rejection, it is respectfully requested to amend the claims to recite a "computer readable medium encoded with a computer program".

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. **Claims 1, 9, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. (US 2004/0196800 A1) in views of Yamamoto et al. (US 2003/0109265 A1) and Yli-Kotila et al. (US 5,539,925).

With respect to **all claims**, it is noted that the language used by Applicant merely suggests or makes optional those features described as “adapted to” but does not require steps to be performed or does not limit a claim to a particular structure. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Regarding claims 1, 9, and 10, Padovani discloses an apparatus and method for a wireless base station for use in a wireless local area network (LAN) sharing one frequency channel, said apparatus being adapted to communicate with a plurality of wireless terminals in a plurality of sectors (see Fig. 2; p.0032, lines 1-12, the cell is divided in a plurality of sub-sectors, i.e. sectors, 0-207, 1-209, 2-211, 3-213, etc.), said apparatus comprising:

a communication control unit (see Fig. 5; p.0046, lines 1-4; p.0050-0051; beamforming control processor 508), and

a plurality of transceivers associated with said sectors (see p.0032, lines 1-7), respectively,

said transceivers having respective directive antennas associated with said respective sectors (see p.0029-0030), wherein,

during a first period of time, said communication control unit causes all of said transceivers in all of said sectors to transmit and receive RF signals at said frequency channel to and from said plurality of wireless terminals, determines locations of said wireless terminals in the sectors (see p.0040; the base station maintains knowledge of the subscribers stations at any time period);

during a second period of time (i.e. even time slots) subsequent to said first period of time, said communication control unit enables one or more of said plurality of transceivers that are

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associated with respective one or more of said plurality of sectors that are not adjacent to each other, to transmit and receive RF signals at said frequency channel to and from wireless terminals, and said communication control unit disables remaining one or more transceivers other than said enabled one or more transceivers, from transmission to wireless terminals (see p.0033, lines 7-14; during even time slots, only even sub-sectors 208 and 212 are transmitting, odd sub-sectors 210, 214 beams are set to 0, i.e. odd transceivers are disabled), and

during a third period of time (i.e., odd time slots) subsequent to said second period of time, said communication control unit enables further one or more of said plurality of transceivers that are associated with respective further one or more of said plurality of sectors that are not adjacent to each other, to transmit and receive RF signals at said frequency channel to and from wireless terminals, said further one or more transceivers being disabled in said second period of time from transmitting, and said communication control unit disables further remaining one or more transceivers other than said enabled further one or more transceivers, from transmission to wireless terminals (see p.033, lines 7-19; during odd time slots, only odd sub-sectors 210 and 214 are transmitting, even sub-sectors 208, 212 beams are set to 0, i.e. even transceiver are disabled).

But, Padovani doesn't expressly disclose wherein the locations of the wireless terminals are in accordance with identification codes of said wireless terminals and with identifications of said transceivers which receive said identification codes, and stores, in a location management table, information indicating which wireless terminals are located in each sector; and wherein a predetermined length of time before the change to said third period of time, said transceiver which is enabled to transmit and receive RF signals starts detection of a transmitted RF signal in a corresponding sector, and broadcasts a packet indicative of a length of said third period of time to wireless terminals in a corresponding sector, when said transceiver does not receive an RF signal.

However, keeping the location of the wireless terminals in a wireless communication network in a database, i.e. location management table, according to a sector ID and the wireless terminal ID, is well known in the art and Yamamoto is evidence of the fact. Yamamoto teaches that in a mobile communications network the ID of the wireless zone (i.e. sector ID) in which the mobile unit is located, is registered for each mobile unit and is an approximate of the position of the mobile units in the wireless communication network (see p.0003; p.0059-0061; Fig. 4). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to maintain a record of the location of the wireless terminals in each of the sectors, according to a sector ID and the ID of the wireless terminals, as suggested by Yamamoto, because it is notoriously well known that the base station keeps records of the location of every wireless terminal that is registered with the network for call set-up purposes.

Furthermore, Yli-Kotila teaches a radio system including a plurality of fixed radio stations (i.e., transceivers) positioned apart from each other within an area covered by the radio system, and at least one mobile stations signaling with one of the fixed radio stations at a time. In order to reduce the power consumption of the mobile radio station, a message is transmitted at the end of the transmission period of each fixed radio station to the at least one mobile radio station, and in response to the message, the mobile radio stations switches off its unnecessary power-consuming portions during the transmission break of the respective fixed radio station for a turn-off period (i.e., length of time) indicated by the extinction message (abstract; col. 3, lines 34-67). Although Yli-Kotila teaches that the invention presents the mobile station the opportunity of switching off the receiver of the radio telephone, it is possible to turn-off other unnecessary power consuming radio telephone circuits. It is well known in the art that a mobile radio station transmitter is another power

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consuming radio telephone circuit, and turning off the transmitter would reduce power consumption of the mobile radio station and would disable transmissions to the fixed radio stations.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, wherein a predetermined length of time before the change to said third period of time broadcasting a packet indicative of a length of said third period of time to wireless terminals in a corresponding sector, when said transceiver does not receive an RF signal, as suggested by Yli-Kotila, in order to reduce power consumption of the wireless terminals during the transmission break of the transceivers (i.e., fixed radio stations).

10. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in views of Yamamoto et al. and Yli-Kotila et al., and further in view of Pfeiffer et al. (US 4,672,656).

Regarding claim 5, the combination of Padovani, Yamamoto, and Yli-Kotila et al. disclose the apparatus according to claim 1, but doesn't expressly disclose wherein, during said first period of time, said communication control unit causes all of said transceivers to transmit, in all said sector, a packet addressed to one of said wireless terminals, whose current location is unknown. However, Pfeiffer teaches that radio stations, i.e. BS, emits search signals in the entire area covered by the system for determining the location of the mobile subscriber terminal that is momentary unknown (see col. 1, lines 37-46). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to transmit a packet addressed to one of said wireless terminal, whose current location is unknown, as suggested by Pfeiffer, because it is important for the system to know the location of the wireless terminals in the coverage area at all times in order to efficiently communicate with the wireless terminals for call set up purposes.

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11. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in views of Yamamoto et al. and Yli-Kotila et al., and further in view of Kawai et al. (US 2004/0163024 A1).

Regarding claim 6, the combination of Padovani, Yamamoto, and Yli-Kotila disclose the apparatus according to claim 4, but doesn't expressly disclose, wherein, during said second period of time, in one of said plurality of sectors, when one of said plurality of transceivers receives an identification code of one of said plurality of wireless terminals which has been located in another sector, from said one wireless terminal, said communication control unit stores said identification code of said one wireless terminal into said location management table in association with said one sector. However, updating the location records of wireless terminals according to their movement in the network is well known in the art and Kawai is evidence of the fact. Kawai teaches that in a mobile communication system, it is necessary to maintain a database of mobile users, called a home location register, which is updated as a mobile terminal moves from one area to another, in order for calls to be routed efficiently according to the location of the mobile terminals in the network (see p.0002). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to during said first period of time, the communication control unit stores the wireless terminal ID associated with a new sector, as suggested by Kawai, because it is necessary to maintain a record of the locations of the wireless terminals updated so that calls may be routed to them efficiently.

12. **Claims 8, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in views Reed (US 6,754,504 B1) and Yli-Kotila et al.

Regarding claims 8 and 11, Padovani discloses a method and a wireless terminal for use in a wireless LAN sharing one frequency channel, said wireless terminal being adapted to communicate

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with a wireless base station in any one of a plurality of sectors, said wireless terminal comprising: a control unit and a transceiver (see Fig. 2; p.0033, lines 1-16; it is inherent that subscriber stations comprises a control unit and a transceiver), wherein said control unit causes said transceiver to transmit and receive RF signals at said frequency channel to and from said wireless base station during a second period of time (see Fig. 2; p.0033, lines 1-16; as shown in figure 2; subscribers stations transmit and receive signals to/from the sub-sectors that are active in the even time slots, i.e. second period of time).

But, Padovani doesn't expressly disclose wherein said control unit causes said transceiver to transmit a response packet containing an identification code of said wireless terminal to said wireless base station in response to a polling packet received from said wireless base station during a first period of time, and

wherein said control unit allows said transceiver to receive a broadcast packet indicative of disabling transmission during a third period of time subsequent to said second period of time and indicative of a length of said third period of time, when said transceiver does not transmit an RF signal and disables said transceiver from transmission during said third period of time.

However, Reed teaches that in response to receiving a polling signal transmitted from the base station, the portable communications unit transmit an identification signal (i.e., packet containing identification code) to the base station, thereby identifying themselves to the network controller as being present within the area of the base station (col. 8, lines 12-20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, wherein said control unit causes said transceiver to transmit a response packet containing an identification code of said wireless terminal to said wireless base station in response to a polling packet received from said wireless base station, as suggested by Reed, in order for the

wireless terminals to identify themselves to the network as being present within the area of the base station.

Furthermore, Yli-Kotila teaches a radio system including a plurality of fixed radio stations (i.e., transceivers) positioned apart from each other within an area covered by the radio system, and at least one mobile stations signaling with one of the fixed radio stations at a time. In order to reduce the power consumption of the mobile radio station, a message is transmitted at the end of the transmission period of each fixed radio station to the at least one mobile radio station, and in response to the message, the mobile radio stations switches off its unnecessary power-consuming portions during the transmission break of the respective fixed radio station for a turn-off period (i.e., length of time) indicated by the extinction message (abstract; col. 3, lines 34-67). Although Yli-Kotila teaches that the invention presents the mobile station the opportunity of switching off the receiver of the radio telephone, it is possible to turn-off other unnecessary power consuming radio telephone circuits. It is well known in the art that a mobile radio station transmitter is another power consuming radio telephone circuit, and turning off the transmitter would reduce power consumption of the mobile radio station and would disable transmissions to the fixed radio stations.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, wherein said control unit allows said transceiver to receive a broadcast packet indicative of disabling transmission during a period of time, when said transceiver does not transmit an RF signal and disables said transceiver from transmission during said third period of time, as suggested by Yli-Kotila, in order to reduce power consumption of the wireless terminals during the transmission break of the transceivers (i.e., fixed radio stations).

Prior Art of Record

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Gardner et al. (US 6,188,903 B1) – Method and apparatus for frequency reuse in cellular communication systems.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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